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HED: An Inertial Confinement Fusion Modelling Code for High Energy Density Simulations G.M. FURNISH, D.S. MILLER, J.F. PAINTER, N.A. GENTILE, W.G. EME, Lawrence Livermore National Laboratory — A new code for high energy density (HED) simulation is under construction at LLNL in support of the Advanced Strategic Computing Initiative. This code represents the aggregation of physics modelling techniques developed previously in the ICF3D and FLAG codes into a unified framework for ICF computational modelling and other high energy density applications. The new code exploits object oriented design techniques to support the coexistence of multiple physics algorithms for various subsystems such as hydrodynamics, diffusion, radiation transport, etc. For example, either finite volume or discontinuous finite element hydrodynamcis may be selected. Advanced C++ techniques are used to support efficient execution in the face of replaceable subsystem components. The Python script language is employed to support programmable simulations and diagnostics, and to facilitate user interaction.

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☐ Prefer Oral Session
☒ Prefer Poster Session

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